(1) Have cargo piping, vent piping, and refrigeration equipment that have no connections to other systems;

(2) Have valves, flanges, fittings, and accessory equipment made of steel, stainless steel, except types 416 and 442, or other material specially approved by the Commandant (CG–OES);

(3) Have valve disk faces, and other wearing parts of valves made of stainless steel containing not less than 11% chromium;

(4) Have gaskets constructed of spirally wound stainless steel with Teflon or other material specially approved by the Commandant (CG–OES);

(5) Not have asbestos, rubber, or cast iron components in the cargo containment system and piping;

(6) Not have threaded joints in cargo piping;

(7) Have a water spray system under §154.1105 that protects the above deck cargo piping; and

(8) Have a nitrogen inerting system or on board nitrogen gas storage that can inert the vapor space of an ethylene oxide cargo tank for a period of 30 days under the condition of paragraph (e) of this section.

(b) Cargo hose used for ethylene oxide must:

(1) Be specially approved by the Commandant (CG–OES); and

(2) Be marked ''For (Alkylene or Ethylene) Oxide Transfer Only.''

(c) Ethylene oxide must be maintained at less than 30 °C (86 °F).

(d) Cargo tank relief valves for tanks containing ethylene oxide must be set at 539 kPa gauge (78.2 psig) or higher.

(e) The vapor space of a cargo tank carrying ethylene oxide must be maintained at a nitrogen concentration of 45% by volume.

(f) A vessel must have a method for jettisoning ethylene oxide that meets §§154.356 and 154.1872.

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983; USCG–2014–0688, 79 FR 58285, Sept. 29, 2014]

§154.1730 Ethylene oxide: Loading and off loading.

(a) The master shall ensure that before ethylene oxide is loaded into a cargo tank:

(1) The tank is thoroughly clean, dry, and free of rust;

(2) The hold spaces are inerted with an inert gas that meets §154.1710(b)(1); and

(3) The cargo tank vapor space is inerted with nitrogen.

(b) Ethylene oxide must be off loaded by a deepwell pump or inert gas displacement.

(c) Ethylene oxide must not be carried in deck tanks.

§154.1735 Methyl acetylene-propadiene mixture.

(a) The composition of the methyl acetylene-propadiene mixture at loading must be within the following limits or specially approved by the Commandant (CG–OES):

(1) One composition is:

(i) Maximum methyl acetylene and propadiene molar ratio of 3 to 1;

(ii) Maximum combined concentration of methyl acetylene and propadiene of 65 mole percent;

(iii) Minimum combined concentration of propane, butane, and isobutane of 24 mole percent, of which at least one-third (on a molar basis) must be butanes and one-third propane; and

(iv) Maximum combined concentration of propylene and butadiene of 10 mole percent.

(2) A second composition is:

(i) Maximum methyl acetylene and propadiene combined concentration of 30 mole percent;

(ii) Maximum methyl acetylene concentration of 20 mole percent;

(iii) Maximum propadiene concentration of 20 mole percent;

(iv) Maximum propylene concentration of 45 mole percent;

(v) Maximum butadiene and butylenes combined concentration of 2 mole percent;

(vi) A minimum saturated C_4 hydrocarbon concentration of 4 mole percent; and

(vii) A minimum propane concentration of 25 mole percent.

(b) A vessel carrying a methyl acetylene-propadiene mixture must have a refrigeration system without vapor compression or have a refrigeration system with the following features:

(1) A vapor compressor that does not raise the temperature and pressure of